Impact of VAT on prepaid Telecommunication services

The Ministry of Finance is considering scrapping the VAT exemption for prepaid telecommunication services. This will impact negatively on economic growth and increase the digital divide within Namibia. It will further throw back Namibia's international competitiveness and make it one of the most expensive countries for telecommunication services in Africa.

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Introduction

A directive from the Ministry of Finance from the 22 July 2007 requires Telecom Namibia, CellOne and MTC to charge VAT on its prepaid telecommunication services. Residential users of mobile telephones were excluded from VAT when VAT was first introduced in Namibia to promote the use of telecommunication services. Prepaid services were assumed to be predominately residential in nature and were hence zero rated as well. 92% of mobile phone users in Namibia use prepaid mobile services. Removing the VAT exemption from prepaid airtime would therefore increase the price that 92% of mobile subscribers have to pay by up to 15%. The burden of that increase is likely to be borne by consumers, the poor and informal small businesses in particular, depending on how much of the increase the operators pass-through.

ICTs and Sustainable Development

There is ample evidence from around the world of the positive impact of ICTs on economic growth and development. ICTs are important input factors for an economy similar to roads, water supply and electricity. Numerous studies have shown that ICTs contribute to economic growth, employment and social inclusion. It is therefore important that policy makers monitor progress towards access and usage of ICTs.

A paper by Roeller and Waverman (2001) suggests that the spread of modern fixed-line networks in OECD countries was responsible for one third of output growth between 1970 and 1990. Waverman et al (2005), investigating the role of mobile phones in developing economies, found that mobile telephony plays the same crucial role that fixed telephony played in developed economies in the 1970s and 1980s. Their study covered 38 developing countries for which full data was available for the period 1996 to 2003. The findings of this study suggest that mobile phones are substitutes for fixed lines in developing countries but complement fixed lines in developed countries, implying a stronger growth impact in developing countries. Both papers are cross country studies using supply side / macro data.

Using data from small and medium sized enterprises from 14 African countries Stork and Esselaar (2006) show that ICT access and usage helps SMEs to improve profitability and labour productivity.

Case Uganda

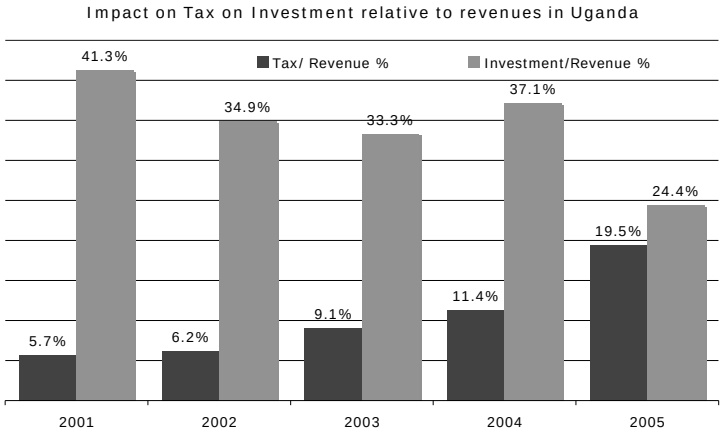
The case of Uganda is a good example of how the economic and social gains from effective telecommunications regulations can be spoiled by a Ministry of Finance. Uganda's telecommunications regulator is leading in Africa in terms of effectiveness and vision. However, the ICT sector expansion has been hampered by increases in taxation on telecommunication services. The current tax on prepaid airtime is 30%, 18% VAT and 12% excise duty (see Hisali 2007). The total usage tax on Fixed line services is 23%.

Table 1: VAT and excise duties on mobile airtime in Uganda

Independent variables	VAT	Excise Duty	Total Tax Burden
2001/2002	17%	7%	24%
2002/2003	17%	10%	27%
2004/2005	17%	10%	27%
2005/2006	18%	12%	30%
2006/2007	18%	12%	30%

Taxes have been imposed and increased on telecommunication services in Uganda between 2001 and 2006. The telecommunications regulator in Uganda, the UCC, commissioned a report to measure the impact of these tax increases on the demand for telecommunication services (see Hisali 2007) which derived the following results:

- The Average Profit Per User (APRU) per month declined along with tax increases.
- Tariff increases for mobile services have been met with more than proportionate reductions in demand.
- Tax increases were more than proportionately borne by consumers.
- Subscriber growth slowed down considerably due to tax increases.
- Tax increases for mobile services led to an increased use of payphones which are relatively cheaper.
- Increasing taxes led to a decrease of investments in the sector.
- A gradual reduction and eventual elimination of excise duty on airtime would result in a 56% increase in demand for mobile services and a 34.3% increase in penetration over the period 2007 to 2010.

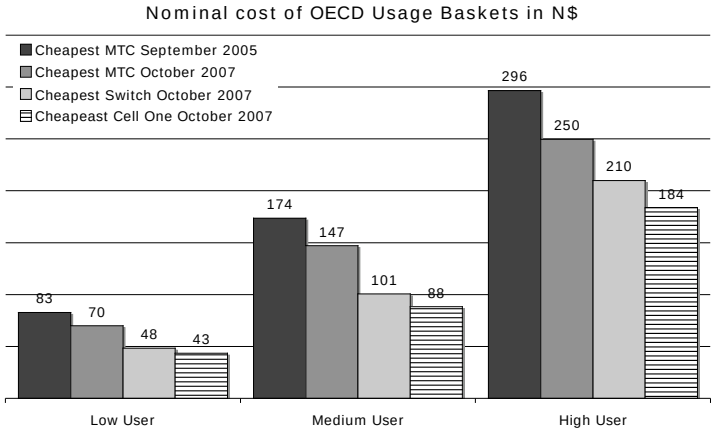


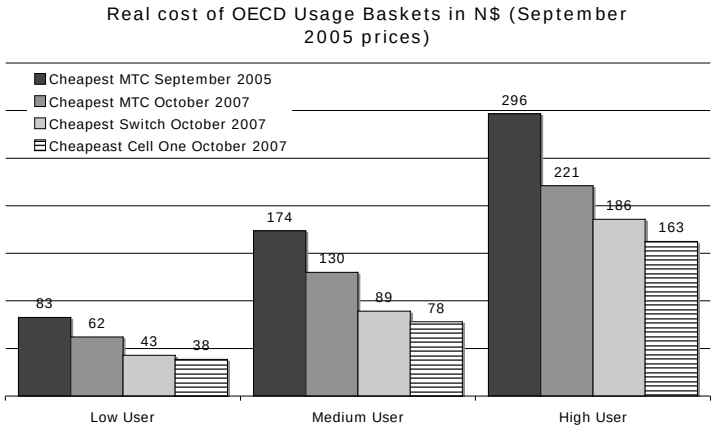
The general conclusion of the report is that the government's tax policy contradicts the government's universal access targets.

Price trends in Namibia

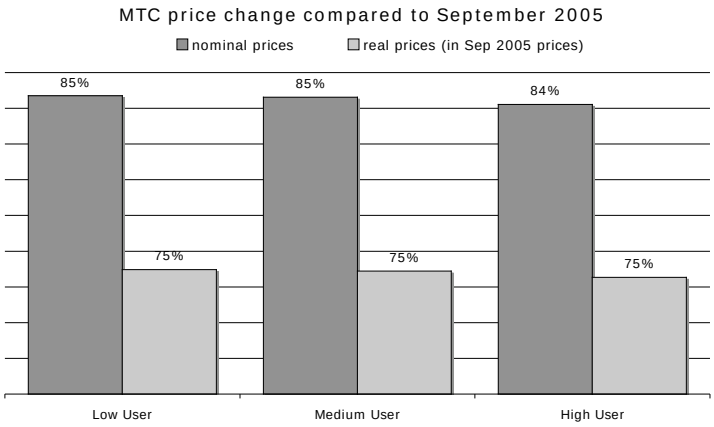
The OECD mobile price-benchmarking basket was last revised in February 2006 and defines three users, a Low User, a Medium User and a High User based its assumptions on usage (minutes and SMS), time-period of calls and call destinations on information submitted by member countries.

ResearchICTafrica and NEPRU use the same methodology for comparing prices across Africa. The reasoning behind this is that contracts and prepaid tariffs vary across operators and countries to an extent that a product to product comparison is impossible. What matters most in deciding on what mobile contract and which operator to choose is what the expected monthly expenditure is for an individual or household. Defining usage baskets and pricing them for all prepaid and contract options on a monthly basis and then comparing only the cheapest available is the fairest way of comparing countries and operators with each other.

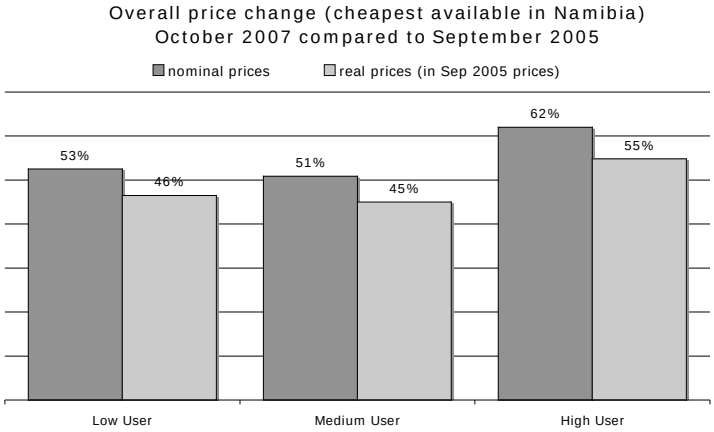




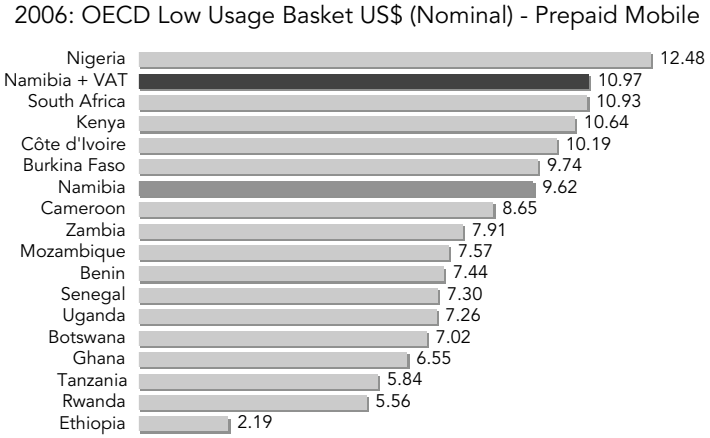
The introduction of competition for mobile telephony through CellOne and Switch has shaken up the sector and reduced prices in nominal and real terms. The graphs above show the nominal and real costs of OECD usage baskets in Namibia for all operators.

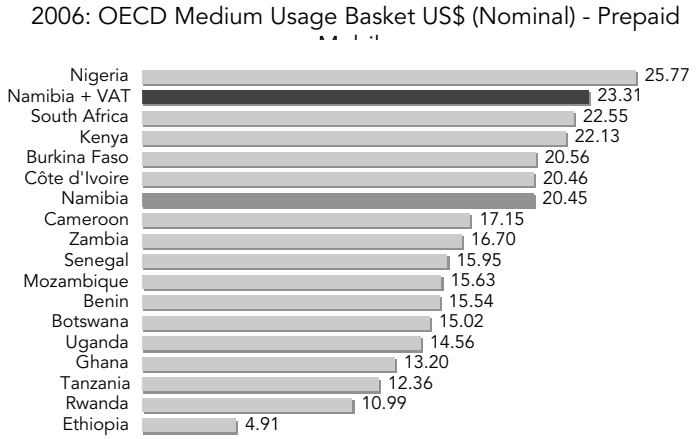


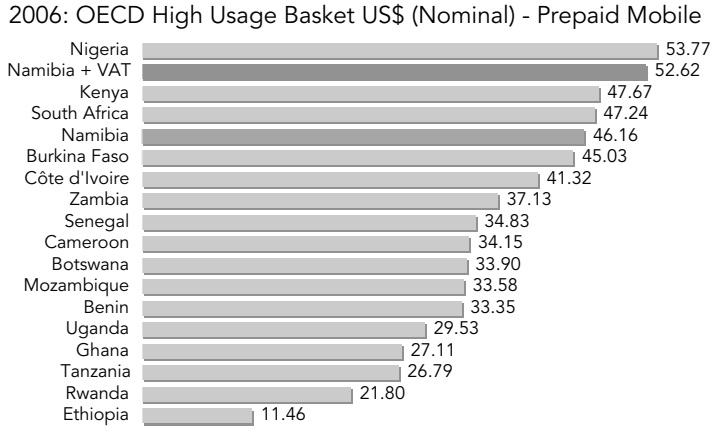
MTC's prices are now 85% of what they were in September 2005 in nominal and 75% in real terms. The cheapest mobile product available in Namibia for low and medium users has dropped to just about half of September 2005 prices in nominal terms and to even less in real terms. High mobile service users as defined by the OECD are saving between 38% and 45% compared to September 2005, if they choose the cheapest product in the market.



The graphs below show how VAT on prepaid mobile services would have changed Namibia's competitiveness in relation to 16 other African countries in 2006. Prepaid usage costs were in the middle in 2006 in nominal terms but would have been among the most expensive if VAT had been applicable in 2006.



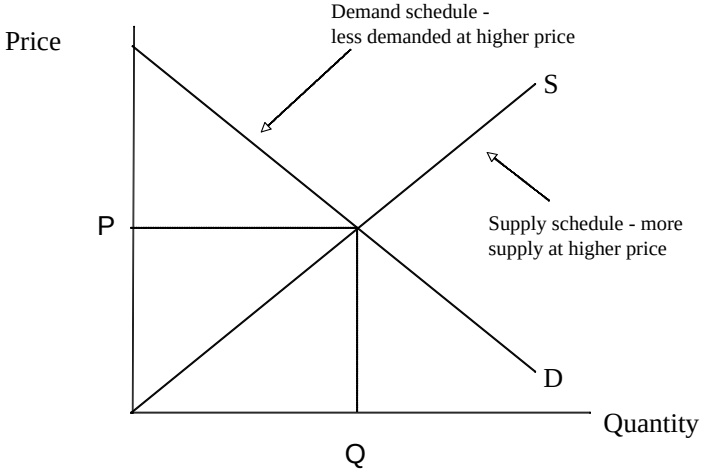




Theory of Taxation

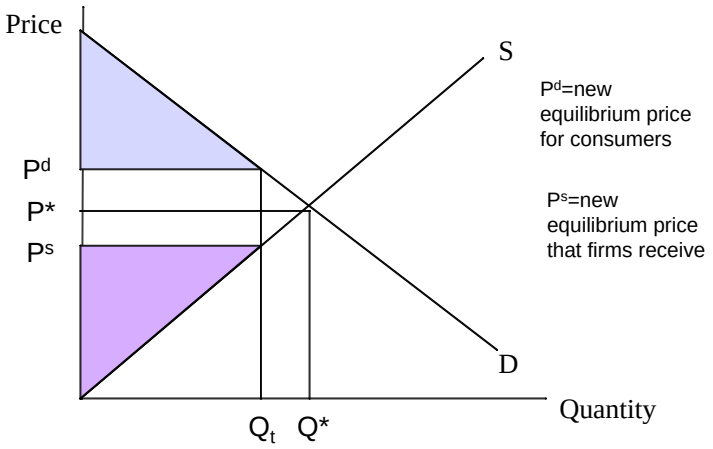
Imposing taxes on services will usually result in higher prices for those services. It might be that only a part or all of the tax burden is passed on to the consumer, depending on the price elasticities of the market and the cost of providing the affected services.

Generally, lower prices will lead to higher demand for services, while higher prices will stimulate investments in the sector and the provisioning of services by operators. An equilibrium is reached when demand equals supply. This is being displayed in the graph below. The quantity produced and consumed is Q and the equilibrium price is P.



Assuming that 50% of the new tax is borne by the consumer and 50% by the operators the new price would not increase by 15% but only 7.5%. At the new price P^d consumers will call less (Q_t) than before (Q^*). At the same time operators make less money. Firstly, because they receive less for their services (P^s instead of P^*) and secondly because consumers purchases less (Q_t instead of Q^*).

The tax collection will be be less than 15% of the revenues at P* and Q* since the demand at the new price is less than at the initial price level. The tax collected is less than what consumers and producers have lost through the tax (reduced consumer and producer surplus). This is known as dead weight loss, a loss to society incurred by imposing taxes (Wheatley, 2006). The subsequent sections try to estimate the loss in consumer and producer surplus as well as the loss to the Namibian economy by estimating the price elasticity of demand for Namibian pre-paid services.

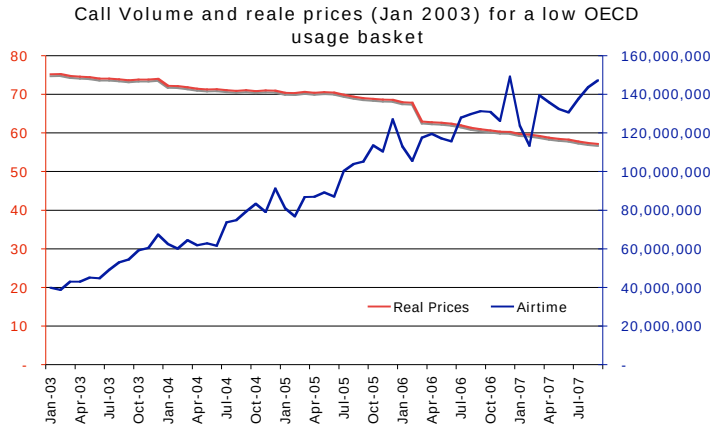


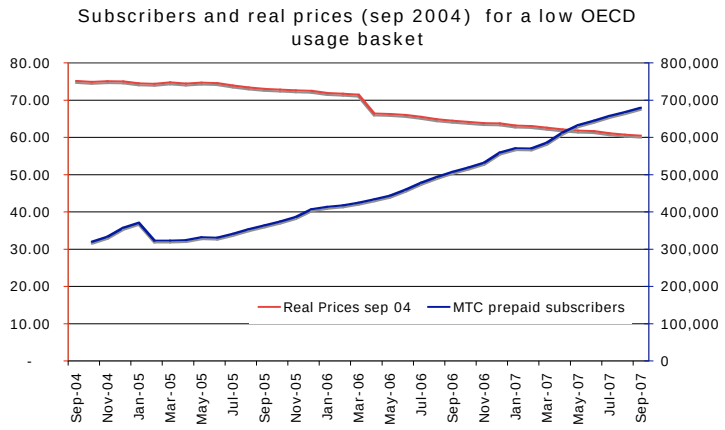
Access and Usage

When discussing mobile phone penetration one needs to distinguish between access and usage costs. Access costs are the costs for a mobile phone and a SIM card while usage costs are the cost of minutes talked or SMS sent in a month. The negative impact of VAT on prepaid services will mainly stem from higher usage costs. Poor people will still be able to keep their mobile phone and SIM card but will be able to call and SMS less. Additionally, the mobile penetration will grow slower due to more expensive SIM cards

Price Elasticity

Plotting real prices for prepaid telecommunication services against call volumes and prepaid subscribers shows an inverse relationship. This confirms economic reasoning that high prices will lead to less call volume and subscriber growth. The falling prices have led to increased subscriber numbers and higher call volumes.





The question that arises from that is by how much will the demand be reduced if VAT is imposed on prepaid usage. For this price elasticities need to be calculated. MTCs prepaid subscribers and call vol-

umes are used for this exercise. CellOne and Telecom's Switch are too young to provide a long enough time series..

Using data from January 2003 to September 2007 gives a time series of 57 data points. The model used for estimating the price elasticity of call volume is based on real prices and makes use of seasonal dummies. Dichotomous variables for each month are used to detect seasonal variations. The call volume is for example highest in December and lowest in January/February. The price elasticity is estimated by regressing monthly call volume between January 2003 and September 2007 on relative prices expressed in January 2003 prices.

$$C = \beta_0 + \beta_1 P + \beta_s S + \varepsilon$$

where:

C= call volume

P= cost of low user prepaid services per month in relative prices

S=seasonal vector of 12 dichotomous variables, 1 for each month.

The results of the regression tell a clear story. The adjusted R square of 0.881 indicates that above 88% of the variation in call volume is explained by the model. The F values of 35.666 further shows that the model is significant in its explanatory power.

Table 2: Dependent variable : Call volume

Independent variables	t	Standardised Beta
Constant	24.843	24.843
Real Prices	-19.985	-0.931
December	2.121	0.127

For the seasonal dummies only the December variable showed as significant and positive, implying that the call volumes in Decembers are significantly higher than in any other month.

The coefficient for P indicates that a 15% increase in usage costs will lead to 13.965% decrease in call volume. Applying this to the current call volume of MTC, Switch and CellOne together would mean that there would be a reduction of 21 million minutes called per month if the operators pass on the VAT to their customers in full. This means less benefit for consumers, less profit for operators and an adverse effect on the economy. If demand for telecommunication services were less elastic the economic impact of imposing VAT would be less. However, the contrary is more likely to be the case. Waverman et al (2005) use a different model for their 38-developing-country study, linking mobile penetration to mobile prices. They find a own price elasticity of -1.5, which is even more elastic compared to the results of this policy brief. This implies that a percentage increase in prices will be met by an over proportional decrease in demand.

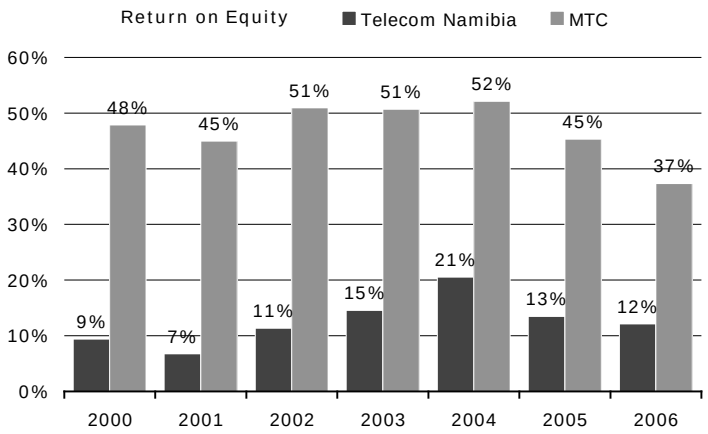
Subscriber numbers are not likely to go down due to the fact that a number can be maintained with little expense such as a SMS every couple of months. However the growth in subscriber numbers is likely to slow down, similar to the Uganda experience. Increases in the cost of the starter pack will make SIM cards less affordable for the poor.

Less growth in access and less usage will mean less economic growth and therefore less tax revenues. Imposing VAT on prepaid services might hence only increase tax revenues in the short term. NEPRU and Research ICT Africa are conducting nationally representative household survey in 17 African countries at the moment. The results from this survey will allow researcher to calculation the loss to consumers producers and the economy as a whole more precisely.

Are Namibian Operators too Profitable?

Return on Equity (RoE) equals the net income divided by the shareholders' equity. The figure below displays MTC's and Telecom Namibia's return on equity. MTC's shareholders received about 50 cents in earnings for every Namibia dollar invested in equity capital for 2002, 2003 and 2004. Since then the ROE is declining.

One could argue that MTC's return on equity is very high in international comparison and that imposing VAT will reduce their profitability but not burden consumers. This would however be the wrong approach. If companies are "too profitable" in a monopoly or oligopoly situation then it is the regulator which is required to intervene and not the receiver of revenues. Further, the profitability will decline as the operators in Namibia's telecommunication market will compete increasingly with each other.



Conclusion

The Ministry of Finance is considering scrapping the VAT exemption for prepaid telecommunication services. This will impact negatively on economic growth and increase the digital divide within Namibia. It will further throw back Namibia's international competitiveness and make it one of the most expensive countries for telecommunication services in Africa. Telecom Namibia and MTC have been very profitable in the past due to their monopoly position and regulatory inefficiencies. The main beneficiary of the high revenues has been the government as the dominant or sole shareholder of these operators. Instead of milking the sector through raising taxes more efforts need to be undertaken to reduce costs of services. The introduction of competition to Namibia's mobile sector has already lead to a considerable price drop.

The preservation of competition is however not automatic once licences have been awarded. Market access is limited and larger operators can squeeze out smaller ones. An effective regulatory environment is key to reap the socio-economic benefits of information and communication technologies. Three important steps need to be taken for that:

- A new telecommunications act
- A strongly resourced and independent regulator for the entire ICT sector
- Clear policy guide lines for the regulator

Government has failed to deliver any of the three in 2007 despite verbal commitments of key policy and decision makers. The regulatory limbo remains the highest risk for any investor in the sector. Imposing VAT on prepaid-services will just make the situation worst.

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